

Chapter I

Overview of the Mexican Environmental Market and Environmental Policy Trends in the Mexican Government

This section provides an overview of the Environmental Technology and Services Sector in Mexico as well as the Baja California peninsula. It also discusses the current state of the Mexican economy and recent trends in Mexican environmental policy with regard to regulations and enforcement.

Environmental Technology and Services Sector

Definition

As defined by the U.S. International Trade Administration (ITA), the environmental technology sector is comprised of products and services that involve:

- Pollution control in air, water, and soil
- Solid/hazardous waste management
- Site remediation
- Environmental monitoring and recycling

Included are products and services that perform one of four functions: (1) they monitor and measure the condition of the environment; (2) they help reduce or prevent pollution during a process; (3) they treat hazardous substances at the end of a process in order to control pollution; and/or (4) they restore and remediate polluted sites.

Market Data

According to the ITA, environmental technology (ET) is among the most rapidly growing sectors in the world.¹ In 2001, the global market was an estimated US\$500 billion and was projected to grow to US\$545 billion by the

year 2004. In Mexico, the second top ET export market for the United States behind Canada,² the ET sector grew at an average annual rate of 4 percent between 1997 and 2001. It is expected to continue growing at an annual rate of 7 percent during the 2002–2006 period. Experts estimate that the market size, including the water segment, is valued at US\$10 billion.³ At the end of 2001, 72 percent of Mexican imports in the ET sector came from U.S. vendors. Additional data for environmental market segments are displayed in Figures 1 and 2.

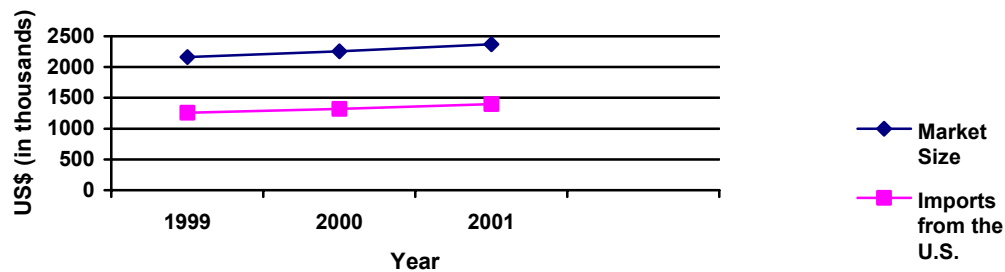


Figure 1: Market Trends for Water Resources Equipment and Services Demand in Mexico⁴

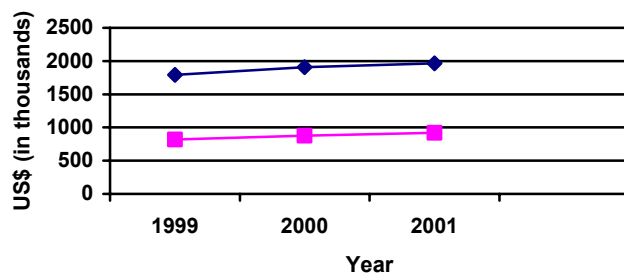


Figure 2: Market Trends for Pollution Control Equipment and Services Demand in Mexico⁵

Overview of the Baja California Peninsula

The Baja California peninsula is a dynamic region in Mexico. Its geographic proximity to the United States and its isolation from Mexico City have contributed to strong regional ties with California and Arizona. The implementation of the North American Free Trade Agreement (NAFTA) has deepened relations even further and contributed to an increase in the peninsula's importation of U.S. goods. In 1999, U.S. goods comprised 84 percent of Baja California's total import market. This figure indicates an increase in U.S. exports to Baja California by 15 percent since the implementation of NAFTA.⁶

Baja California

The northern half of the peninsula relies heavily on industry and international trade for its economic activities. Its population of approximately 3.5 million is concentrated near the Mexican-U.S. border and continues to increase at an annual growth rate of about 4 percent.⁷ Nearly 95 percent of the population lives in the municipalities of Tijuana, Mexicali, and Ensenada. The remainder lives in the smaller municipalities of Tecate and Playas de Rosarito.

Baja California's economy is heavily dominated by the *maquiladora* industry, which constitutes about 22 percent of its gross regional product (GRP) and employs the largest number of people. Growth in the *maquiladora* industry averaged 6 percent per year over the 1996–2001 period, but economic slowing in the United States and the implementation of NAFTA's Article 303 have reduced this growth in 2002. Over 90 percent of expansion in recent years has been in the electronics sector, particularly in the production of television and computer monitors in addition to other electronic components.⁸ Other important economic sectors in Baja California include wood products manufacturing, services such as tourism (about 20 percent of state GRP), fishing and canning, agriculture (about 1.5 percent), and mining (about 0.5 percent).

Thus, some of the best environmental export opportunities in the northern half of the peninsula include products related to water infrastructure development, industrial environmental management, air pollution equipment, and

other products that help mitigate the negative environmental impacts of rapid, unplanned population and urban growth in most of the state.

Baja California Sur

In contrast to its northern neighbor, the state of Baja California Sur relies less on industry for its sustenance. Its significantly smaller population of 450,000 people is located primarily at the southern tip of the peninsula and its economy is focused on tourism. As a result, commercial prospects are mostly found in tourism-related products, construction, marina products, and consumer goods.⁹ In addition to ecotourism, other environmental export opportunities in Baja California Sur include water desalinization products and services as well as photovoltaic energy equipment.

Mexico's Economy

Mexico's economy grew at a negative rate of 0.3 percent in 2001.¹⁰ Because economists attribute this recession to Mexico's interdependence with the United States rather than domestic factors, Mexico's economy is expected to recover in 2002 as the United States recovers from its recession. Economists predict that GDP growth will increase to 1.5 percent in 2002. Meanwhile, the industrial sector decreased by 3.5 percent in 2001 due to reduced demand from the United States and a strong Mexican peso. The peso's strength has increased Mexican consumer purchasing power and stimulated foreign direct investment, a trend that is expected to continue thru this year. Nevertheless, economists expect the peso to decline, although the peso has defied expectations in the past few years and continued to increase in value relative the U.S. dollar. An increase in purchasing power could be beneficial to U.S. exporters as importers are better able to afford U.S. products.

Environmental Investments in Mexico and the Fox Administration

In a recent public statement, Víctor Lichtinger, Mexico's environmental minister, declared that it would take at least 20 years to restore the damage created by decades of neglect to Mexico's natural resources and to approach

sustainability.¹¹ His statement highlights a gradual change in attitude toward the environment that has emerged in Mexico over the past decades. Increased attention to environmental conditions and the related shortage in environmental infrastructure, such as wastewater treatment facilities and solid waste disposal sites, is generating a number of new projects that will be financed over the next five years through the collaboration of agencies and banks at several levels—including federal, state, local, domestic, and multinational development banks.¹² Mexico's environmental agency, the Secretariat for the Environment and Natural Resources (Secretaría de Medio Ambiente y Recursos Naturales—SEMARNAT), has a total budget of US\$1.4 billion for 2002.

Environmental Legislation and Federal Agencies

The cornerstone of environmental legislation in Mexico is the General Law of Ecological Balance and Environmental Protection (Ley General de Equilibrio Ecológico y Protección Ambiental—LGEEPA). Originally passed in 1988, it was modified in 1996. The LGEEPA addressed air, water, noise, and soil pollution, as well as the management of hazardous wastes, hazardous materials, and nuclear energy. The LGEEPA remains the principal legal instrument used for environmental enforcement today, but has included some revisions and is supported by a series of official standards known as the Mexican Official Norms (Normas Oficiales Mexicanas—NOMs).

Over the past three decades, environmental responsibilities at the federal level have been shifted among agencies depending on whether the environment was treated as a health or economic development issue. Under the Zedillo administration (1994–2000), the first cabinet-level environmental agency, known as the Secretariat of Environment, Natural Resources, and Fisheries (Secretaría de Medio Ambiente, Recursos Naturales y Pesca—SEMARNAP), was established to foster more cohesive environmental policies.¹³ The Fox administration has continued the goal of integration by requiring interaction among subagencies in developing strategic plans and setting coordinated objectives when planning programs and policies. In addition to moving oversight of fishing to the

agricultural agency, which led to renaming the environmental agency the Secretariat of Environment and Natural Resources (Secretaría de Medio Ambiente y Recursos Naturales–SEMARNAT), the Fox administration also created an independent forestry agency (CNF) and is renewing emphasis on national water resources.

Decentralization

The Fox administration's National Development Plan (Plan Nacional de Desarrollo 2001–2006) further strengthens federalism in Mexico by establishing a commitment to redistribute income and decentralize responsibilities.¹⁴ Through the process of decentralization, state environmental agencies and new municipal environmental agencies have been created. Along with these new institutions, states and municipalities in the Baja California peninsula have developed local environmental standards and legislation. As states and municipalities increase their capacity to deal with environmental policy and enforcement, the trend toward decentralization will continue with the transfer of increased resources to states and municipalities. As this happens, in future years, with state and municipal environmental agencies more actively enforcing their laws, this will stimulate growth in markets for environmental technologies and services in the peninsula.

State Agencies

State agencies in Baja California and Baja California Sur currently have a number of responsibilities for monitoring the environment. The General Directorate of Ecology (Dirección General de Ecología–DGE) of Baja California is responsible for granting industrial permits to operate plants in the state. In Baja California Sur, the state carries out environmental responsibilities through the Directorate of Urban Planning and Ecology (Dirección de Planeación Urbana y Ecología). The State Commission of Public Services (Comisión Estatal de Servicios Públicos) has offices in each of Baja California's municipalities except Playas de Rosarito, which is represented by a district office at CESPT in Tijuana.

The State Commission offices are responsible for household wastewater treatment as well as supplying potable water to the local populations. Under the Fox administration's efforts to decentralize environmental responsibilities, the state DGE and CESPT may soon have greater authority, but effective action will depend on the amount of financial resources and capacity building provided by the federal government.

Municipal Agencies

The Fox administration is furthering the decentralization efforts of environmental management by increasing municipalities' abilities to raise funds through the issuance of bonds for infrastructure and to develop their own regulations. In 2001, the Municipality of Tijuana established municipal environmental regulations through consultations with a multi-sector task force including municipal officials, community members, environmental attorneys, and representatives from nongovernmental organizations (NGOs), such as the Proyecto Fronterizo de Educación Ambiental (Border Project for Environmental Education).¹⁵ With further development of the smog check program, Tijuana municipal agencies will be responsible for monitoring vehicle emission levels and issuing permits. Ensenada has had a municipal environmental agency for some time now.

Cross-Border Environmental Management

Since the 1980s, Mexican and U.S. officials have been increasing collaboration on environmental problems that have transborder effects. Acknowledging that pollution does not recognize political borders, the U.S. and Mexican federal governments signed the Agreement on Cooperation for the Protection and Improvement of the Environment in the Border Area (commonly known as the La Paz Agreement) in 1983. Based on this precedent, the U.S. and Mexican governments developed the Integrated Environmental Plan for the Mexican-U.S. Border Area (IBEP) in 1992, which later evolved into the Border XXI Program in 1996.¹⁶ Through these agreements, federal and state agencies

met and established working relationships with their counterparts across the border. U.S. and Mexican government officials, beginning with the La Paz Agreement, developed working groups by environmental media to enhance cross-border technology transfer, training, and collaboration on enforcement issues. Upon reaching a sunset phase in 2001, the Border XXI Program is being reevaluated, although working relationships continue. The next iteration of the program, due to be implemented early in 2003, will have a more regional focus rather than a borderwide approach and will retain the specific working groups. In the future, the binational working groups will play an important role in defining environmental priorities at the regional level.

Three other mechanisms for cross-border environmental collaboration include the Border Environment Cooperation Commission (BECC), the North American Development Bank (NADBank), and the Commission for Environmental Cooperation (CEC). Although widely criticized, each has advanced the ability of the border region to begin catching up with pressing environmental concerns. The BECC certifies border infrastructure projects for financing by the NADBank and enables communities to become more involved in determining which projects are suitable for their needs. Thus, before a project can be funded by the NADBank, it must be certified by the BECC. This practice has catalyzed considerable criticism as it slows down the funding process, but has increased transparency and enabled communities to provide input into the projects that will impact their municipalities financially and in other ways. A review of BECC project submissions provides an excellent overview of local border infrastructure needs in the areas of wastewater treatment, water supply, and solid waste. In the future, the BECC and NADBank will expand beyond their original focuses on water, wastewater, and solid waste infrastructure projects to also deal with air quality and hazardous waste issues.

As will be seen in greater depth in Chapter IX, the NADBank provides loans, grants, and training for border environmental infrastructure projects. Although it has brought more financing opportunities to the border region, its

effectiveness has been constrained by the legal and regulatory context that has prevented it from lending directly to Mexican municipalities and the fact that most infrastructure projects have low rates of return and are unable to generate the income necessary to repay NADBank loans that must offer most loans at U.S. commercial rates. In 2002, discussions of the evolving role of the BECC and NADBank are still ongoing. Finally, the trinational CEC provides community groups with a mechanism to address environmental education and enforcement issues in the North American continent. The CEC has increased information exchange in a range of environmental issues, including pollution prevention, biodiversity, community right-to-know, and others. The CEC has also provided a forum for residents to submit complaints when governments do not adequately enforce their own environmental laws, although the CEC has little punitive power.

States and cities have also increased collaboration across the border in recent years. In 2000, the State of California's Environmental Protection Agency (Cal/EPA) developed a Strategic Environmental Plan with its counterpart agency in the State of Baja California, the General Directorate of Ecology (DGE). In doing so, the states formalized a working relationship that began in 1997 with information exchange workshops in which government officials from California agencies met their counterparts in Baja California and shared information about their projects and proposals. Through interagency projects, Baja California has been able to develop some new infrastructure and capacity, albeit far less than it needs to keep pace with growing demands.

Priorities of the Fox Administration and Emerging Trends

The complexity of actors, conflicting jurisdictions, and disparate legal systems makes the U.S.-Mexican border region a challenging place to do business. At the same time, the region's plethora of environmental needs provide many opportunities for investment. SEMARNAT has expressed interest in developing and implementing a national strategy for solid wastes and industrial and municipal wastewater, as well as designing industrial waste plans to

accompany the implementation of infrastructure projects.¹⁷ Other priorities¹⁸ during the Fox administration include:

- Reviewing environmental standards (NOMs) and revising them to facilitate compliance by small- and medium-sized companies
- Implementing programs to engage more private-sector participation in the treatment and disposal of industrial waste
- Increasing spending on environmental infrastructure in the Mexican-U.S. border region

Although progress has been slow, the coordinated demands made by the municipal and state leaders belonging to the National Action Party (Partido Acción Nacional–PAN) in office since December 2001 will help keep attention focused on border environmental infrastructure needs. Increased emphasis on legal enforcement will also require more companies to invest in equipment and services that bring them into legal compliance. Both of these tendencies will lead to an increase in opportunities for providers of environmental technology and services.

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